

ABSTRACTS OF CARDIOLOGY

Edited in collaboration with Abstracts of World Medicine

Cardiovascular Innervation. G. A. G. MITCHELL, O.B.E., T.D., M.B., CH.M., D.Sc. With a foreword by Sir Geoffrey Jefferson. Edinburgh and London: E. & S. Livingstone, Ltd., 1956. Pp. xii + 356. £2 15s.

This monograph on the innervation of the cardiovascular system is a notable addition that is likely to become the standard work of reference on this subject. The text, which is freely illustrated, is based largely on the author's own studies, by dissection and microscopy, of the anatomy of the autonomous nervous system in man and there is a comprehensive survey of the literature and of the historical aspects of the subject. This is a book on applied anatomy and the author has used the results of physiological, pathological, and clinical studies to elucidate the function of the autonomous fibres. The chapter on the innervation of vascular structures in the thorax gives an excellent description of the innervation of the coronary vessels which will be of interest to the clinician and the account of the nerve supply of the pulmonary vascular bed is of importance to those engaged in physiological studies on patients with heart disease.

Graham Hayward

A Post-myocardial-infarction Syndrome. Preliminary Report of a Complication Resembling Idiopathic, Recurrent, Benign Pericarditis. W. DRESSLER. *J. Amer. med. Ass.*, **160**, 1379-1383, April 21, 1956.

The author describes an unusual syndrome resembling benign pericarditis or the "post-commissurotomy syndrome", following a myocardial infarction. In 8 of the 10 cases a pericardial friction rub developed between the 3rd and the 24th days of the illness, persisted for a week or more, and in some cases recurred over a period of weeks. In 7 of the patients there was radiological evidence of pleural effusion, which was aspirated in 3 cases. Fever was prolonged after the initial infarction in 6 cases, in 2 a second rise of temperature occurred on the 9th and 15th days respectively, while in one case 8 weeks elapsed between the infarction and the onset of renewed fever. Pain, commonly of a pleuro-pericardial nature, was with fever the most consistent symptom and was felt at various sites, including the chest, jaw, arms, shoulders, and upper abdomen. A leucocytosis of as much as 35,000 cells per c.mm. occurred in 7 cases. The syndrome ran a prolonged course and showed a marked tendency to recur. Cortisone was found to terminate the fever and pain and to shorten the course of the syndrome. A warning is given that anticoagulant therapy is dangerous and is therefore contraindicated.

C. Bruce Perry

A Correlative Study of Valvular Morphology and Clinical Results in Aortic Commissurotomy. R. S. LITWAK, J. F. URICCHIO, and W. LIKOFF. *New Engl. J. Med.*, **254**, 781-786, April 26, 1956.

The authors have correlated some of the anatomical appearances noted at transaortic valvotomy with the late results in 40 patients (34 male and 6 female, aged 20 to 60 years) subjected to this operation. They found that the degree of calcification of the valve increased with advancing years, whereas limitation of mobility did not. Calcification was present to a greater or lesser extent in 35 (87%) of the patients and impairment of mobility in 28 (70%). Fusion of all three commissures was present in 30 (79%) of the patients, and in just under half (16 (42%) of 38 patients) the area of the aortic orifice was estimated as less than 0.5 sq. cm.

Valvotomy increased the opening in 24 cases (68.5%) to a size greater than 1.6 sq. cm., this figure being taken arbitrarily to represent an adequate anatomical result. Although generally the less the degree of calcification of the leaflets, the better is the chance of a satisfactory operation, nevertheless even in those with this complication an adequate split was achieved in 12 (52%) of those benefited.

Four of the patients died at operation and 7 died later, mostly of infective endocarditis. Of the 29 survivors, 23 were improved. As the authors point out, the dominant factor influencing the results was mobility of the valve, and so long as any mobility remained there was a possibility of improvement despite the presence of calcification.

J. R. Belcher

Bodily Development in Congenital Heart Disease. (Zur Frage der körperlichen Entwicklung bei angeborenen Herzfehlern.) A. SCHAEDE, H. LOTZKES, and H. H. HILGER. *Arch. Kreislforsch.*, **24**, 1-26, June, 1956.

In an investigation carried out at the University Medical Clinic, Bonn, 750 young patients with congenital heart disease were seen between 1948 and 1953, of whom 576 who had been examined by means of angiocardiology and cardiac catheterization were further studied with regard to their subsequent bodily development as shown by body weight and height. They were classified into three groups: (1) those with no shunt (41 cases), (2) those with left-to-right shunt (117 cases), and (3) those with right-to-left shunt (418 cases), Group 3 being further subdivided according to (a) the severity of cyanosis and anaemia and (b) the pulmonary blood flow.

It was found that in all these patients bodily development was grossly reduced, weight being more affected than height.

D. Goldman

Surgery of the Heart. CHARLES P. BAILEY, M.D., M.Sc., L.L.D., F.A.C.S., F.C.C.P., F.I.C.S. London: Henry Kimpton. 1955. Pp. 1062. £9.

This book is a most important contribution to cardiac surgery and its large size reflects the rapid development and increasing scope of this method of treatment. The author has made notable contributions to the surgery of mitral valve disease and the section on this subject which occupies nearly a quarter of the volume is outstanding. The chapter on congenital heart disease reflects accurately the position when the book was written, but in a subsequent edition considerable revision of the treatment of septal defects and the practice of open heart surgery will need to be made. There is too much rather elementary cardiology included and its omission would decrease the size of the book without lessening its value. The selection of cases for the various forms of surgery is viewed largely from the point of view of the cardiac surgeon and a cardiologist would in many cases favour a more conservative approach to this problem, particularly at the present time when the value of the various operations described remains to be proved. The book is freely illustrated and can be strongly recommended.

Graham Hayward

Electric Instability of the Heart. The Concept of the Current of Oxygen Differential in Coronary Artery Disease. B. L. BROFMAN, D. S. LEIGHNINGER, and C. S. BECK. *Circulation (N.Y.)*, 13, 161-177, Feb., 1956.

In only a small proportion of cases of coronary disease can death be attributed to the degree of myocardial destruction. The authors suggest that in other fatal cases there is a disorder of cardiac mechanism, and that possibly abnormal impulses (an "injury current") originating from the area of ischaemic myocardium give rise to ventricular fibrillation. They then describe experiments designed to study the manner in which an area of ischaemic myocardium may give rise to an injury current. In these the hearts of anaesthetized dogs were exposed, and areas of local myocardial ischaemia were produced by ligation of the coronary vessels.

It was found that in normally oxygenated hearts and hearts uniformly anoxic throughout there was no variation in the resting electric potentials and spontaneous ventricular fibrillation did not occur. However, when an area of myocardium was rendered ischaemic an injury current was produced, rendering the heart electrically unstable, so that the coordinating mechanism was upset. It was noted that this was associated with a difference of oxygen potential at the junction of normal and ischaemic myocardium. Moreover, it was shown that the uniformly anoxic heart was also electrically stable, but if an area was perfused with oxygenated blood a difference of oxygen potential arose at the border of this area and electric instability again developed, with the danger of ventricular fibrillation. The authors suggest that electrical instability of the myocardium due to unequal coronary blood flow may be responsible for the majority of deaths in patients with coronary disease.

H. E. Holling

The Effect of Prolonged Adherence to a Salt-free Diet on Life Expectancy in Essential Hypertension. H. SARRE, W. KAMPMANN, and G. SCHMIDT. *Klin. Wschr.*, 34, 509-511, May 15, 1956.

In this paper from the University Medical Clinic, Freiburg-im-Breisgau, are reported the results of a 9-year follow-up study of 45 patients with essential hypertension who had been treated for a number of years with Volhard's salt-free diet under supervision of the staff of Volhard's own clinic. Proof of adherence to the diet was obtained by estimation of the urinary chloride excretion. A group consisting of 45 patients who had failed to adhere to the diet served as a control, the two groups being comparable in respect of the severity of the hypertension and of its complications; 30 patients in each group had a diastolic pressure of over 120 mm. Hg when first seen, while 15 patients in the control group and 16 in the treatment group had some degree of cardiac failure. [Unfortunately no mention is made of the age and sex distribution.]

It was shown that the difference in the expectation of life between the two groups was statistically significant for the first 3 years of treatment, 20 patients from the control group, compared with 9 from the treatment group, having died during this period. In the succeeding years, however, the mortality in the treatment group exceeded that among the controls, so that at the end of the 9-year period the number of survivors from each group was almost identical, namely, 11 in the control group and 12 in the treatment group. Analysis of the cause of death showed a marked similarity between the groups.

H. F. Reichenfeld

Amnion Implantation in Peripheral Vascular Disease. E. TROENSEGAARD-HANSEN. *Brit. med. J.*, 2, 262-268, Aug. 4, 1956.

In this paper from the Charing Cross Hospital, London, the author reports the treatment of a series of 40 cases of intermittent claudication, by the implantation of human amnion into the thigh. This method of treatment was suggested by a chance observation that amnioplasty carried out for the treatment of gravitational ulcers had a beneficial effect on intermittent claudication. The patients, all of whom were men, ranged in age from 36 to 89, the average age being 60. Symptoms had been present for 6 months or more in all but 7 cases.

Exercise tolerance was increased in 7, and intermittent claudication disappeared in 29 cases, even on severe exercise, the follow-up period ranging from 8 months to 3 years. Clinical improvement was accompanied by a return of rate of disappearance of radioactive sodium to normal and improved performance in the ergometer tests. In 7 cases the dorsalis pedis pulse returned, while in 14 cases there was a marked increase in the oscillogram readings, though good results were not confined to these cases. In the skin temperature there was an immediate postoperative rise, followed after a month by a fall, which, however, was not accompanied by a recurrence of symptoms. The possible mode of action of amnion implants is discussed and an illustrative case history is reported in some detail.

H. F. Reichenfeld

Mecamylamine, a New, Orally Effective, Hypotensive Agent. Experimental and Clinical Evaluation. E. D. FREIS and I. M. WILSON. *A.M.A. Arch. intern. Med.*, 97, 551-561, May, 1956.

Mecamylamine, a readily-absorbed ganglion-blocking agent, was tried in the treatment of hypertension.

Mecamylamine was given by mouth in an average daily dose of 29 mg. (range 3 to 90 mg.) for periods of 4 weeks to 4 months to 36 patients with moderately severe or severe hypertension. Satisfactory reduction in blood pressure was obtained in all cases, and in some instances improvement in the optic fundi, heart size, electrocardiogram, and renal function. Tolerance to the drug was absent or slight. The treatment of 4 patients had to be stopped because of side-effects. Almost all patients complained of constipation during treatment; other side-effects experienced by about a quarter of the patients included postural faintness, disturbances of accommodation, dry mouth, difficulty in micturition, and impotence.

Of 19 hypertensive patients given mecamylamine by mouth after receiving pentolinium tartrate by mouth for 6 months or longer, 14 preferred the former drug because of its more uniform hypotensive action.

Bernard Isaacs

Effect of Molar Sodium Lactate in Increasing Cardiac Rhythmicity. Clinical and Experimental Study of Its Use in the Treatment of Patients with Slow Heart Rates, Stokes-Adams Syndrome, and Episodes of Cardiac Arrest. S. BELLET, F. WASSERMAN, and J. I. BRODY. *J. Amer. med. Ass.*, 160, 1293-1298, April 14, 1956.

The authors, from the General Hospital and the Graduate Hospital of the University of Pennsylvania, Philadelphia, describe the effect of intravenous and intracardiac injections of molar sodium lactate on 5 healthy controls and 41 patients with a slow heart rate. In 3 with sinus bradycardia there was an increase in heart rate of 50 to 70 per cent above control values during the intravenous infusion of 100 to 160 ml. of molar sodium lactate over 10 to 15 minutes. The same dose given by the same route increased the heart rate in 5 out of 6 patients with partial A-V block and 10 out of 12 with complete A-V block. From a study of 4 cases in which there were Stokes-Adams seizures the authors suggest that the prompt intravenous administration of 20 to 80 ml. of this preparation over a period of 2 minutes, followed by an intravenous infusion at the rate of 1 ml. per minute for 6 to 12 hours, may suffice to prevent subsequent attacks. In 12 cases of terminal cardiac arrest the heart beat was restored by intravenous or intracardiac injection within 2 minutes of molar sodium lactate, and was maintained, with associated artificial respiration, for as long as 9 hours by continuous infusion.

There were few toxic effects from the sodium lactate injections. Pulmonary edema was not encountered. It is considered that the mode of action of the lactate is related to the alkalosis produced by the injection, and that the lactate is metabolized.

W. J. H. Butterfield

The Surgical Treatment of Aortic Stenosis. C. P. BAILEY, H. E. BOLTON, H. T. NICHOLS, W. L. JAMISON, and R. S. LITWAK. *J. thorac. Surg.*, 31, 375-437, April, 1956.

[This article is probably the most comprehensive and detailed account of the surgical treatment of aortic stenosis that has been written. Moreover, the authors do not confine themselves to surgery but give an extensive survey of the aetiology and haemodynamics of the condition.]

In this review, from Hahnemann Medical College and the Bailey Thoracic Clinic, Philadelphia, of the surgical treatment of aortic stenosis, three main types are distinguished. (1) A congenital form, in which the valves are often bicuspid and post-stenotic dilatation is usually present. (2) Arteriosclerotic stenosis. (3) Rheumatic aortic stenosis. The critical point at which there is difficulty in ejection of blood from the ventricle occurs when the area of the orifice is reduced by 75 to 90 per cent. The period of ejection is then unduly prolonged, as may be shown by a study of pressure curves. The blood supply to the heart muscle is also diminished as a result of the lower systolic pressure at the root of the aorta, thus accounting for the anginal symptoms from which many patients suffer.

The surgical approach to the aortic valve may be through the left ventricular wall or through the aorta. The transventricular approach in 68 cases of uncomplicated aortic stenosis gave an operative mortality of 28 per cent. In 87 cases of combined mitral and aortic stenosis the mortality was 18 per cent. The causes of operative death are principally ventricular fibrillation, heart arrest, and hæmorrhage. The transaortic approach is now considered to be safer. The mortality by this procedure (15%) is appreciably lower than that by the transventricular route.

The authors discuss the selection of patients and the techniques of valvotomy in detail. The authors' results suggest that more than 80 per cent of the survivors show improvement over a follow-up period of 1 to 3 years.

T. Holmes Sellers

Cardiocirculatory Studies in Pulsus Alternans of the Systemic and Pulmonary Circulations. M. I. FERRER, R. M. HARVEY, A. COURNAND, and D. W. RICHARDS. *Circulation (N.Y.)*, 14, 163-174, Aug., 1956.

Studies carried out in 21 patients have indicated that alternation of the pulse pressure in man can occur independently in either the greater or the lesser circulation without appearing in the other. Even when bilateral alternation exists, this cyclic variation may disappear in one circulation while persisting in the other. Although pulmonary or systemic hypertension was frequently associated with pulmonary and systemic alternans respectively, hypertension was not invariably present. Furthermore, changes in lesser or greater circulation pressures bore no consistent relationship to the appearance or disappearance of pulsus alternans. Mechanisms responsible for pulsus alternans, in particular variations in stroke volume and vascular pressures, were considered, but no single explanation satisfied the facts revealed in this study.—[Authors' summary.]

The Body Fluids; Basic Physiology and Practical Therapeutics. J. RUSSELL ELKINGTON, M.D., and T. S. DANOWSKI, M.D. Pp. 626 with 175 illustrations. London: Baillière, Tindall and Cox. Price 80s.

The first parts of this monograph describe the basic physiology and biochemistry of the body fluids and the causes and effects of changes in the water and electrolytes of the body that may be encountered clinically. There is a full description of the changes in various disease entities such as renal failure, congestive heart failure, cirrhosis, and endocrine disorders, and a final section on practical therapeutics. The rapid growth of knowledge in this particular field and the complicated nature of the changes that may occur emphasize the need for such a monograph which enables the clinician to make the best use of modern biochemical investigations in the diagnosis and treatment of patients.

Graham Hayward

Cardiac Septal Defects. I. Ventricular Septal Defect. Analysis of One Hundred Cases Studied during Life. D. F. DOWNING and H. GOLDBERG. *Dis. Chest*, 29, 475-491, May, 1956. 2 figs., 6 refs.

The authors believe that most textbook descriptions of ventricular septal defects wrongly convey the impression that these lesions are relatively benign. They have therefore analysed the records of 100 patients (50 of each sex) with such a lesion seen at Hahnemann Medical College Hospital and the Bailey Thoracic Clinic, Philadelphia, of whom 76 were under 15 years of age. All the patients were studied by means of cardiac catheterization, and in 22 cases angiocardiology or thoracic aortography was carried out in addition.

Symptoms possibly of cardiac origin were present in 89 patients, the chief being fatigue in 72, dyspnoea in 71, and cyanosis in 39, while cardiac failure had occurred in 22; rarer symptoms were chest pain, chronic cough, paroxysmal tachycardia, hæmoptysis, and syncope. Radiologically, the great majority of patients showed right ventricular enlargement with exaggeration of the hilar and peripheral pulmonary vessels. Evidence of right ventricular hypertrophy was found in 59 per cent of the electrocardiograms. Cardiac catheterization revealed a rise in the oxygen content of the blood on passing from right auricle to ventricle in 90 patients, and 34 were thought to have had a right-to-left shunt. Seventy-two patients were found to have pulmonary hypertension.

As in other conditions causing a left-to-right shunt, the pulmonary vascular resistance increases. Thus there is a progressive rise of right heart pressure; when this exceeds the systemic pressure a right-to-left shunt with cyanosis develops. In this way the features of Eisenmenger's complex appear. The authors do not consider this complex to be a separate entity; their findings suggest that in all cases the aorta can be "aligned" with the left ventricle, and that true overriding in this condition does not occur. In conclusion they emphasize that ventricular septal defect is a serious lesion, which causes symptoms in the majority of those affected and cardiac failure in a large number.

F. Storer

Diseases of the Heart and Circulation. PAUL WOOD. 2nd edition, revised and enlarged. Eyre & Spottiswoode (Publishers) Ltd. Pp. 1005. Price 5 gns.

The high reputation that the first edition of this book published in 1950, acquired will be enhanced by the new edition which has been extensively revised and includes much new material and many new illustrations. The striking advances that have been made in the investigation and treatment of congenital heart disease and acquired valvular disease have resulted in a considerable expansion in the chapters on these subjects, which now occupy over a quarter of the book. Although, as the author states in the preface, there may be over-emphasis on this new work, the result has been to produce one of the best contemporary accounts of the use of modern methods of investigation in cardiology. Throughout the book there is emphasis on the importance of clinical methods of examination and the author shows how the results of special methods of investigation have been used to increase the accuracy of clinical diagnosis and to influence treatment. The style of writing is incisive and the author's own views are stated clearly but without dogmatism. This book can be highly recommended.

Graham Hayward

Le Systeme "Pompe-Oxygénéateur" de Lillehei-Dewall: Cœur-Poumon artificiel pour chirurgie cardiaque sous vision directe. CLAUDE LENFANT. Nouvelle Editions Publicitaires. Paris. 55 figures. 270 pages.

This monograph describes the experimental work done by the author and his colleagues at the Centre Chirurgical Mari-Lannelongue in preparation for using the apparatus for operations on patients; it consists of three parts.

(1) *The Apparatus.* Each of the constituents of this is described in detail and the authors find that with it an arterial oxygen saturation of nearly 100 per cent can be maintained. They describe three modifications they have made to obtain an adequate oxygen supply for operations on animals of more than 20 kg.—additional apparatus for filtration, enlargement of the oxygenator circuit by increasing the mixing tubing and the spural, and a method of recovering the coronary blood, so that this was not wasted. With these they were able to obtain a supply of from 1800 to 2000 ml. of oxygen a minute.

(2) *The Operations.* Seventy operations on animals, mostly dogs, are described, and the final methods that were reached for using this for surgical operations on men. In favourable conditions they obtained a survival rate of 90 per cent and thought that deaths were generally due to hazards of the operation rather than faults of the apparatus.

(3) The third part is devoted to studying the physiological state during the use of the apparatus. They found that conditions generally were satisfactory with the use of 35 ml. per kg. per minute of oxygen though this could be increased up to 58 ml. per kg. and that this was compatible with the animal's recovery in good condition after a period of thirty minutes.

This monograph contains so much important detail that it should be consulted in the original by those interested.

Maurice Campbell

Dilatation of the Pulmonary Artery in Pulmonary Stenosis.

F. S. P. VAN BUCHEM. *Circulation (N.Y.)*, **13**, 719-724, May, 1956.

An attempt was made at the University of Groningen to correlate the diameter of the pulmonary artery (obtained at angiography with the patient in the oblique position) and the systolic pressure difference between the right ventricle and pulmonary artery in 20 cases of simple pulmonary valvular stenosis. Stenosis was mild in the majority, the pressure difference being under 30 mm. Hg in 10, 40 to 50 mm. Hg in 6, and over 100 mm. Hg in 4. The diameter of the pulmonary artery, normally 22 to 33 mm. by this method, ranged from 30 to 75 mm., and evidently bore no relation to the severity of the stenosis or to the age of the patient. In 6 cases of "idiopathic dilatation of the pulmonary artery" in which pulmonary stenosis had been excluded by cardiac catheterization the appearance of the dilated artery resembled that found in cases of pulmonary stenosis and its diameter ranged from 39 to 49 mm. From this evidence the author concludes that dilatation of the pulmonary artery is probably a primary condition, and is not merely secondary to the valvular stenosis.

J. A. Cosh

Pulmonary Valvular Stenosis with Intact Ventricular Septum. Results of the Brock Type Valvulotomy.

C. W. LILLEHEI, P. WINCHELL, P. ADAMS, I. BARON-OFISKY, F. ADAMS, and R. L. VARCO. *Amer. J. Med.*, **20**, 756-759, May, 1956.

The authors report the findings on re-examination after operation of 20 out of 43 patients subjected to pulmonary valvotomy by the Brock technique, the average interval since operation being 15 months. The auscultatory findings changed very little. In a small number of cases there was a diastolic murmur consistent with pulmonary incompetence. The most significant alteration occurred in the right ventricular pressure. For the whole group the average reading was 116 mm. Hg before operation and 56 mm. Hg afterwards; when the 5 cases in which there was no significant alteration were excluded the figures were 123 and 43 mm. Hg respectively. Especially gratifying was the response in the cyanotic group (7 patients), in whom the fall in the hæmoglobin level and the increase in arterial oxygen saturation reflected the significant alteration produced in the right ventricular pressure.

R. G. Rushworth

Hæmatogenous Brain Abscess in Cyanotic Congenital Heart Disease. E. J. NEWTON. *Quart. J. Med.*, **25**, 201-220, April, 1956.

Over the 10-year period 1944-53 69 patients with solitary hæmatogenous brain abscess have been treated at the United Birmingham Hospitals; of these, 7 had congenital heart disease of the cyanotic variety, that is, with a central venous-arterial shunt. These cases were specially investigated, are described in detail, and discussed together with 72 previously reported cases, the salient features of which are given in a table.

In most of these 79 cases the abscess arose without any underlying septicæmia or pyæmia and in the absence of subacute bacterial endocarditis, nor could it be attri-

buted to any thoracic cause such as lung abscess, empyema, or bronchiectasis, or to infection of the mastoid or paranasal air sinuses—in short, to none of the usual causes of brain abscess. It appears, therefore, that a central venous-arterial shunt predisposes to hæmatogenous brain abscess, possibly on account of the partial by-passing of the pulmonary capillaries, where it is probable that many blood-borne bacteria are filtered out of the circulation and dealt with effectively in the normal person during the course of a transient bacteriæmia. The author stresses the importance of being aware of the tendency for brain abscess formation in cases of cardiac malformation of this type; in cases with an arterio-venous shunt there appears to be no special association with brain abscess.

Of 75 of the 79 cases reviewed, 40 were in males and 35 in females, so that the sex distribution was approximately equal. The patients' ages ranged from 3 to 57 years, average 16.3 years, the highest incidence (23 cases) being in the age group 5-9. The most frequent type of cardiac malformation was Fallot's tetralogy (23 certain cases and 12 probable cases). There appeared to be no special site of predilection for the abscess in the brain. The diagnosis of the condition lies largely in being aware of its possibility; the most prominent symptom in these cases was prolonged headache. Treatment, by aspiration through a burr-hole and systemic administration and local injection of an antibiotic, was on orthodox lines.

G. S. Crockett

Coronary Arteriosclerotic Heart Disease in the Younger Age Group: Its Greater Frequency in This Group among an Increasingly Older Necropsy Population.

O. SAPHIR, L. OHRINGER, and H. SILVERSTONE. *Amer. J. med. Sci.*, **231**, 494-501, May, 1956.

Having observed in recent years an apparent increase in the incidence of arteriosclerotic heart disease (A.H.D.) in the younger age groups, the authors studied the necropsy records at the Michael Reese Hospital, Chicago, covering a period of 34 years. All cases of coronary arteriosclerosis or atheromatosis with or without myocardial fibrosis or infarction in patients over the age of 20 were included, except those in which there were minimal changes. The necropsy records for 3 different periods, 1920-39, 1940-9, and 1950-3, were studied, the incidence of A.H.D. being as follows: 31 per cent of 2696 necropsies in 1920-39; 32 per cent of 2764 necropsies in 1940-9; and 29 per cent of 1572 necropsies in 1950-3.

Altogether 2165 patients had A.H.D., 1403 being males. The proportion of these patients under the age of 50 rose from 7.3 per cent in 1920-39 to 12.2 per cent and 11.5 per cent in 1940-9 and 1950-3 respectively, the greatest increase being in patients aged 40 to 49. Nevertheless, the total number of cases of A.H.D. found at all necropsies did not rise, and the total number of necropsies performed on patients under the age of 50 fell considerably. The authors therefore consider that these figures indicate a significant increase in the number of cases of A.H.D. in the younger age groups; in their view this increase may be related to factors other than diet.

Francis Page

Diseases of the Heart. CHARLES K. FRIEDBERG, M.D.
Second edition. Pp. 1161. London: W. B. Saunders
& Company Ltd. Price £6 6s.

The new edition of Friedberg's textbook has been re-set so that although the length of the text has been considerably increased the size is only slightly increased. Three new chapters on graphic methods of examination have been added and the extensive revision of all sections of the book includes accounts of the recent work on direct vision cardiac surgery and the selection of patients for surgical treatment. The scope of the book is encyclopædic and it is a considerable achievement for a single author to have presented such a complete account of modern developments in all aspects of cardiology. A notable feature is the bibliography which is unusually extensive and complete.

Graham Hayward

The Influence of Mitral Regurgitation on the Results of Mitral Valvotomy. J. R. BELCHER. *Lancet*, 2, 7-11, July 7, 1956.

The results of mitral valvotomy in 52 patients with mitral incompetence were compared with those obtained in 100 patients operated on for pure stenosis. The state of the valve was fully assessed with the finger before operation. The degree of regurgitation was noted and the cases classified in 4 grades, while the degree of stenosis was recorded on a 5-point scale. On the basis of mobility the valves were classified as hypermobile, diaphragmatic, or immobile. After valvotomy the degree of split was assessed and the degree of regurgitation reassessed.

In cases in which a diaphragmatic valve was found the results of valvotomy were fairly good, even when incompetence was dominant; the degree of regurgitation was increased by the operation in relatively few instances. On the other hand the results in cases of hypermobile and immobile valves were poor, and the author suggests that if the presence of these valves can be confidently diagnosed surgery should not be undertaken. Traumatic mitral incompetence was caused by valvotomy in 10 cases, but this had little influence on immediate results, the dominant factor being the efficacy of the split. The severity of the postoperative incompetence had more influence on the late results.

There were 7 operative deaths and one late death among the 100 patients with pure stenosis and 3 operative and 6 late deaths among those with incompetence (most of the deaths in the latter group occurred in patients with hypermobile and immobile valves).

The mechanism of production of the clinical signs and the differential diagnosis of the three types of valve are discussed. It is concluded that the clinical diagnosis of the anatomical type of valve may be possible, that valve mobility plays a dominant part in operability, and that commissurotomy is all that is necessary where a

diaphragmatic valve is found; in cases in which diagnosis of one of the other types of valve can be made with certainty surgery should be withheld until suitable methods of treatment have been developed.

F. J. Sambrook Gowar

The Serum Lipids in Human Atherosclerosis. An Interim Report. J. C. PATERSON, B. R. CORNISH, and E. C. ARMSTRONG. *Circulation* (N.Y.), 13, 224-234, Feb., 1956.

This is an interim report on a study of serum lipids in relation to the progression of atherosclerosis which is being made on 800 patients permanently confined to the Westminster Hospital, Department of Veterans' Affairs, Western Ontario, 700 of them being psychotic and the remaining 100 being elderly and in need of domiciliary care. Since April, 1953, specimens of blood have been obtained at yearly intervals from each patient.

The findings are now reported in the first 50 fatalities in the series, the mean antemortem serum cholesterol and phospholipid values and those of four classes of lipoproteins (S_f 0-12, 12-20, 20-100, and 100-400) being compared statistically with the degree of atherosclerosis present at necropsy. This last was determined in segments of the coronary arteries, the basilar artery and circle of Willis, the abdominal aorta, and the left femoral artery, the degree of atherosclerosis being graded in each case as "severe," "moderate," or "slight" according to each of 6 different indices—crude morphological grading, thickness of the largest plaque, total content and concentration of lipid, and total content and concentration of calcium. Thus the relationship of each of the 6 different measures of atherosclerosis in 4 types of artery to the mean antemortem level of 6 different lipids in the serum could be determined. Almost all the 50 subjects were in the 6th to 9th decade, the age distribution in the whole series being 40 to 90 years or more.

In the analysis of the findings in these first 50 cases only 4 of the 138 sets of comparisons showed a significant relationship, namely, an increase in the serum cholesterol: phospholipid (C:P) ratio and an increased concentration of S_f 0-12 lipoproteins in the serum in association with severe coronary sclerosis, an increased serum concentration of S_f 0-12 lipoproteins in association with severe aortic sclerosis and an increased serum C:P ratio in association with severe femoral sclerosis. Even these associations were not consistent. There was no significant elevation of the serum level of any of the lipids or lipoproteins in any of the cases with gross clinical manifestations of atherosclerosis such as coronary thrombosis. The serum cholesterol, phospholipid, and S_f 0-12 lipoprotein values estimated serially were remarkably constant in each case, but the values for the other lipoproteins were more variable. The severity of atherosclerosis in different arteries in the same individual varied widely.

Robert de Mowbray